

on both sides of the North Sea to severe aerial bombardment had failed to materialize.

For Britain, the lull was largely due to a persisting shortage of bomber aircraft. While the RAF Air Staff, headed by Marshal of the Royal Air Force Sir Charles Portal, urged the creation of a large bomber force, Churchill remained skeptical about the promise that a strategic air

### Europe: 1941-1945

## Europe

as opened in the Balkans and Britain quickly tapered off, tented itself with a series of coupled with some occasional Bomber Command (a raid on announced as the reprisal for an RAF Bomber Command con- German targets on the Conti- arying between precision and ing daylight attacks. Yet the slow to rise, and heavy losses Prime Minister Churchill re- forces could be accumulated.<sup>2</sup> ver the period from June to ight over the winter, and what of all the civilian population

ism, (London: H. M. S. O., 1957),  
ategic Air Offensive Against Ger-

|      |                      |  |
|------|----------------------|--|
| 1941 | <i>April 6</i>       | German forces invade Yugoslavia and Greece, severely bombing Belgrade  |
|      | <i>May</i>           | End of the "Blitz" over Britain, as lull begins for bomber operations in Western Europe                      |
|      | <i>June 27</i>       | Germany invades the Soviet Union   |
|      | <i>June-November</i> | Moderate RAF bombing offensive against Germany   |
|      | <i>December 11</i>   | Germany declares war on the United States, after Japanese attack on Pearl Harbor                             |
| 1942 | <i>February 14</i>   | Orders issued for RAF Bomber Command "area offensive," serious offensive now to continue for rest of the war |
|      | <i>February 27</i>   | Air Marshal Harris appointed head of Bomber Command  |
|      | <i>April 14</i>      | "Baedeker raids" begin as Luftwaffe retaliation for Bomber Command offensive, continue through the summer    |
|      | <i>Fall</i>          | First U.S. air forces begin to assemble in Britain   |
|      | <i>November 2</i>    | British defeat Germans at El Alamein   |
|      | <i>November 8</i>    | Allied force lands in French North Africa  |

|      |               |   |
|------|---------------|---|
| 1943 | January 14-24 | Casablanca Conference decides to follow dual approach in bombing of Germany   |
|      | January 24-29 | RAF fire raids on Hamburg kill over 42,000 people   |
|      | January 31    | Russian victory at Stalingrad, decisive reversal of Germans in Russia   |
|      | July 23       | Main Russian westward advance begun   |
|      | September 3   | Italy surrenders to Allies  |
|      | October 10    | Schweinfurt raid produces heavy losses by United States Army Air Force, in daylight attacks on "precision" ball-bearing targets |
| 1944 | February      | USAAF introduces long-range fighter escorts   |
|      | April         | USAAF begins to shift its offensive to German oil supply  |
|      | June 6        | Anglo-American forces land in Normandy  |
|      | June 10       | First V-1 flying bombs hit Britain  |
|      | August 23     | Allied forces liberate Paris, and then move rapidly toward German frontiers   |
|      | September 8   | First V-2 rocket bombs hit Britain  |
| 1945 | January 17    | Russian forces take Warsaw, moving toward Germany's eastern frontiers   |
|      | February 13   | Bombing of Dresden, 135,000 people killed   |
|      | March 7       | American forces cross the Rhine at Remagen  |
|      | May 7         | German unconditional surrender  |

offensive directed against morale could win the war without any forcible return to France:

We all hope that the Air offensive against Germany will realise the expectations of the Air Staff. Everything is being done to create the Bombing force desired on

the largest possible scale, and there is no cate, however, placing unbounded confidence, expressing that confidence in terms of impairing the enemy's morale we can enters the war, it would have to be supported by armoured forces in many of the com Only in this way could a decision certa

Some of his skepticism was in facing the Blitz:

The Air Staff would make a mistake we were greatly misled by the pictures be wrought by Air raids. This is illustrated by the pictures of air raid casualties, picture of air destruction was so exaggerated responsible for the pre-war policy, and Czecho-Slovakia in August 1938. Again taught us sedulously to believe that if say nothing of France, our position was However, by not paying too much attention to good means of keeping going.<sup>4</sup>

Morale attacks might not remain self too well in the conquered territories

It may well be that German morale very important part in bringing the move simultaneously, and it is quite probable 1943 will be so widely spread throughout of the actual buildings in the home

Industry had, therefore, to be reinforced of bomber aircraft, and some bonus coastal patrols and antisubmarine offensive capacity would now grow

On the German side, the lull that the West was mainly due to the East, where Luftwaffe operations a totally absent. In his anger at the

<sup>3</sup> Text in *ibid.*, p. 184.

<sup>4</sup> *Ibid.*

<sup>5</sup> *Ibid.*



destroying more than half of the B-17s, and forcing an early withdrawal of the remaining bombers to the south.<sup>3</sup>

The Japanese attack on Pearl Harbor itself had been entirely absorbed by the naval and military installations on Oahu, and only one stray bomb

#### Overseas: 1941-1945

|      |                     |  |
|------|---------------------|--|
| 1941 | <i>December 7</i>   | Japanese attack on Pearl Harbor and U.S. air bases in the Philippines                |
| 1942 | <i>February 15</i>  | Fall of Singapore, followed by invasion of Dutch East Indies                         |
|      | <i>April 18</i>     | Doolittle bomber raid on Tokyo   |
|      | <i>May 6</i>        | Surrender of last U.S. forces in Philippines   |
|      | <i>May 7</i>        | Japanese southward naval progress halted in Battle of the Coral Sea                  |
|      | <i>June 4-7</i>     | Battle of Midway. Japanese repulsed in attempt to capture island base in mid-Pacific |
|      | <i>August 7</i>     | U.S. landings in Guadalcanal   |
| 1943 | <i>June-October</i> | U.S. attempts, unsuccessfully, to establish air supremacy in China                   |
| 1944 | <i>June 16</i>      | First B-29 raid on Japan, from bases in China  |
|      | <i>June</i>         | Japanese launch major offensive in China to seize B-29 bases                         |
|      | <i>July 18</i>      | U.S. capture of Saipan, in Marianas Islands, leads to fall of Tojo Cabinet in Japan  |
|      | <i>September 8</i>  | Octagon (Quebec) Conference convened, decides invasion of Japan will be necessary    |
|      | <i>November 26</i>  | First B-29 raid on Japan (Tokyo) from Marianas                                       |

<sup>3</sup> *Ibid.*, pp. 88-90.

1945 *January*

*March 9*

*May 7*

*August 6*

*August 9*

*August 14*

had fallen into the city of I the Philippines, and in Malay primarily military targets and pattern of deliberate terror-b in China was thus not repe had at times felt themselves ta experiment with bombings military weakening. In the immediately following Pearl targets that would not soon fal was no lack of "force" target avoidance of terror-bombings c ernment, a similar discrimina tactical successes hopefully w capability. The Japanese gover restraint in August of 1941, p indiscriminate bombing in C ever).<sup>6</sup>

But any such hopes for Ali disappointed. U.S. projects f Japan had been under develo

<sup>4</sup> See Walter Lord, *Day of Infamy*.

<sup>5</sup> See P. M. S. Blackett, *Military e* don: Turnstile Press, 1948), p. 29.

<sup>6</sup> *Foreign Relations of the United* 1943), p. 722.

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om Marianas

|      |           |   |
|------|-----------|---|
| 1945 | January   | B-29s leave China as result of<br>Japanese ground offensive     |
|      | March 9   | First "area attack" by USAAF on<br>Tokyo, killing 83,000 people |
|      | May 7     | German surrender in Europe                                      |
|      | August 6  | Atomic bomb dropped on Hiro-<br>shima                           |
|      | August 9  | Second atomic bomb dropped<br>on Nagasaki                       |
|      | August 14 | Japanese surrender  |

had fallen into the city of Honolulu.<sup>4</sup> The ensuing Japanese attacks in the Philippines, and in Malaya and Burma were similarly directed against primarily military targets and did not seriously touch residential areas. The pattern of deliberate terror-bombing of cities characterizing the campaign in China was thus not repeated.<sup>5</sup> The Japanese Army leaders in China had at times felt themselves tactically stalemated, and had been tempted to experiment with bombings designed for persuasive effect rather than military weakening. In the campaigns of rapid, southward expansion immediately following Pearl Harbor, however, there were few "value" targets that would not soon fall into Japanese hands in any event, and there was no lack of "force" targets to keep the Japanese bombers busy. This avoidance of terror-bombings could also induce, in the view of the Tokyo government, a similar discrimination on the part of the Allies, while Japanese tactical successes hopefully would serve to eliminate the Allied bombing capability. The Japanese government had already hinted at a new policy of restraint in August of 1941, promising the United States that it would end indiscriminate bombing in China (a promise not immediately kept, however).<sup>6</sup>

But any such hopes for Allied restraint were, in any event, soon to be disappointed. U.S. projects for an early strike against the homeland of Japan had been under development since well before Pearl Harbor. While

<sup>4</sup> See Walter Lord, *Day of Infamy*, (New York: Henry Holt and Co., 1957), p. 158.

<sup>5</sup> See P. M. S. Blackett, *Military and Political Consequences of Atomic Energy*, (London: Turnstile Press, 1948), p. 29.

<sup>6</sup> *Foreign Relations of the United States: Japan 1931-1941*, (Washington: U.S.G.P.O., 1943), p. 722.



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## Chapter XI

### Conclusions

#### RELEVANCE TO THE PRESENT

It has been argued here that the past "bomber menace" may still tell us something about human reactions to the continuing nuclear threat.

→ For while weaponry changes rapidly, human brainpower changes little, if at all; if people four decades ago believed that they possessed today's weapon systems, then we may have a natural "simulator exercise" in many ways superior to any we could attempt to erect artificially.

Extremely effective disabling capabilities (what today are sometimes broadly or narrowly labeled as "counterforce" capabilities) were, over this period, assumed to exist in the airplane; similarly impressive pain-inflicting capabilities (which today might be labeled "countervalue") were also assumed. And on the basis of such assumptions of military technology, a great deal of strategic theory, moreover, did follow.

Human beings have not been especially happy, of course, to share such problems for so long; in terms of safety and serenity, the advent of very effective disabling and terror weapons has been seen as a distinctly unfortunate development. Hopes have, therefore, quite logically been expressed and efforts expended that such threatening weapons be, somehow, eliminated or neutralized. The occasional gratification and more general frustration of such attempts to escape the strategic dilemma suggest parallels with more recent attempts.

Turning to the strategic problem itself, the *absolute* speeds of the air capabilities are, of course, of some importance, if comparisons are to be

drawn with the present. No one could be able to disarm an enemy; no one could arm himself in such a short time as to permit a two hour hearing or giving a two hour hearing of a bombing exchange, to develop a monopoly of airpower perhaps abilities were also calculated and were thought necessary to kill the stability problem is, to a large extent, one of disabling and pain-inflicting dilemma of the 1920's again so cause massive retaliation might were being quickly erased, so the deterrence of the enemy's retaliatory calculations would thus such deterrence would fail. Sometimes seen today are therefore times are "the same"; will human ac-

#### THE HOPE OF NEUTRALIZING

Few situations, in fact, have been removed or made less threatening threat were to be perfectly neutralized might counterproductively have the infliction of such bombing on the difference to bombing could be government and people, such that be unresponsive to the masses but enon is rarely found in any of the twentieth century war. Every nation, concerned concern, at some time, under the interim damage inflicted moreover, including Japan, has leadership for the populace that

Churchill's decision in 1940 may have been primarily intended been his decision in 1914 to against his shipyards and arms



drawn with the present. No one until very recently actually expected to be able to disarm an enemy air force in two hours, or feared being disarmed himself in such a short time. Nonetheless, it was assumed that getting or giving a two hour head start would decisively settle the outcome of a bombing exchange, to determine which side would achieve a monopoly of airpower perhaps at the end of two days. Pain-inflicting capabilities were also calculated as moving more slowly in this period: days were thought necessary to kill millions of civilians rather than hours. Yet the stability problem is, to a large extent, based on the *relative* speeds of disabling and pain-inflicting capabilities, and this makes the strategic dilemma of the 1920's again seem very similar to that of the present. Because massive retaliation might come too slowly as retaliatory capabilities were being quickly erased, situations were foreseen, then as now, where the deterrence of the enemy would be cast into doubt, and where military calculations would thus call for pre-emptive attack if (but only if) such deterrence would fail. Some of the strategic threats and opportunities seen today are therefore the same as those seen then; human beings are "the same"; will human actions also be "the same"?

#### THE HOPE OF NEUTRALIZING TERROR

Few situations, in fact, have arisen where the threat of painful air attack could be removed or made meaningless for any of the powers; if the threat were to be perfectly neutralized for only one nation, moreover, it might counterproductively have led, in some circumstances, to an early infliction of such bombing on other nations. It can be argued that an indifference to bombing could come from a lack of identification between government and people, such that rulers in their bombproof shelters would be unresponsive to the masses lacking such protection. But such a phenomenon is rarely found in any of the societies that would be involved in twentieth century war. Every nation involved, possibly excluding Japan, has evidenced concern, at some time, that its population might buckle and defect under the interim damage inflicted by bombing. Every nation involved, moreover, including Japan, has also evidenced a sympathetic concern of its leadership for the populace that suffered this damage.

Churchill's decision in 1940 to escalate the air war and expose London may have been primarily intended to preserve his military force, as had been his decision in 1914 to pre-empt the Zeppelin attack he expected against his shipyards and armories. But Britain, in World War I, could not

number menace" may still tell of the continuing nuclear threat. Human brainpower changes little, and that they possessed today's "simulator exercise" in many ways is artificial.

(what today are sometimes "capabilities") were, over this early impressive pain-inflicting "countervalue") were also as a result of military technology, a follow.

happy, of course, to share such a serenity, the advent of very soon seen as a distinctly un-ore, quite logically been extending weapons be, somehow, ratification and more general strategic dilemma suggest par-

the *absolute* speeds of the air force, if comparisons are to be





Governmental indifference to air attack has thus largely depended on popular indifference, and, therefore, on the offering of some palliative, allowing citizens either to endure or to forget such attack. Such

A "real" palliative for public "hardening" of the human tar vulnerable to terroristic air attacks, were effected in France measures were introduced, gas masks. Yet such measures never promise the suffering incurred in a bomb close to their factories, and as long were still to function. The more defense completely to prevent terror little effort was expended over. The few occasions where such logically within reach proved over time the prediction that "the bomb generally accepted. But the size overestimated in peacetime, with bombers has often (as in 1940) ness; the side being attacked in perhaps, the exaggerated hopes

### Punishing attacks which are h



the suffering of London, and in the more afraid of invasion than in World War II, similarly showed that the Japanese decision finally vindicated the leadership with which, like Churchill was able to cope, that both Hitler and the Allies by the fate of their weak minister. Such an interpretation and standard characterization of war—any and Japan as unresponsive—would find little correlation, and sympathetic responsiveness differences in policy instead to

and in most cases between decisions there has also been a fear of opinion of the public to fears of attack it might develop only into striking capacity. The British experience most startling. Much of the attack, originated in the ugly incident might frustrate any decision that had been taken by 1939 to stand and to greatly augment the potential itself; in the actual event, which measures had to be put to quickly expressed fears of rebellion, (but no such raids on France occurred). Thus, even "democratic" opinion to having their hand immobilized; inefficiency and able to be tolerated, but rioting, not. Yet, while hoping for the short run, none of these states is fully willing to try to do so for

has thus largely depended on the offering of some palliative or to forget such attack. Such

palliatives for air attack could produce an indifference which we, as sympathetic observers, might find "real" and "objective," or an indifference which "subjectively" drives humans to accept destruction which we might vicariously lament. (This distinction may yet, in fact, prove to be an empty one.)

A "real" palliative for public fears has at times seemed available in a "hardening" of the human target, making the populace less physically vulnerable to terroristic air attack. Evacuations, either planned or spontaneous, were effected in France in 1938 and Britain in 1939; civil defense measures were introduced, gas masks distributed, shelters built and marked. Yet such measures never promised to relieve more than a small fraction of the suffering incurred in a bomber attack, as long as workers had to live close to their factories, and as long as cities had to function if the nation were still to function. The more basic hope of achieving an active air defense completely to prevent terror attacks was also entertained, and not a little effort was expended over the period to achieving such a protection. The few occasions where such active defense was thought to be technologically within reach proved quite disappointing, however, and in peacetime the prediction that "the bomber will always get through" was more generally accepted. But the size of enemy air forces has also normally been overestimated in peacetime, with the result that a limited wartime use of bombers has often (as in 1940) disclosed a previously unsuspected weakness; the side being attacked may thus lose its exaggerated fears (but not, perhaps, the exaggerated hopes for its own air forces).

In the past, therefore, "objective" or physical protection has, at times, been promised and not delivered, while threats at other times have conversely been shown to be imaginary, with the result that a "real" or "objective" security existed again. Such a "real" physical security, either through a defensive technological breakthrough or an offensive default, does not, however, seem certain to remain with us today, and it has, moreover, only rarely been present in this century. More "subjective" palliatives have been generated here, if indeed the distinction between subjective and objective even applies. For nothing is in fact more subjective than this very issue of what destruction or punishment is "acceptable," and what is not. While the disabling capabilities are simply specified in the real and objective terms of casualties and exchange rates, the pain-inflicting, or "countervalue," capability is heavily dependent on how people see "value," a variable still, perhaps, very much less predictable than we might have assumed.

Punishing attacks which are highly undesirable in one environment may



The process of communicational anomalies in which the creation is more crucial than the destruction in some cases, and forcing it in other cases, is the offering of military action, is the offering of a certain nonrational, but effective, deliverance to the people. This palliative in a series of "reprisal" raids. The very inauguration of the services had stemmed, in part, from the effects of the British blockade on the people, and for the occasion of this public demand as "satisfaction" of enemy suffering has served if no more rational argument is credible our threat to mass destruction strategically lost.

Offering a slightly different above-mentioned issuance have led the inhabitants of themselves to severe punishing raids to live up to an happy surprise. A parallel "thinking about the unthinkable" might argue that today the most horrible forms of war is preferable if we are not in a "prewar" period. Improbable that we will, this time, of a terror war, that it would now expect.

Without attempting to postulates can be ventured. A prepared population, which has respect before the war, but which to "how bad" things will be compared population, deeply in threat is predictable and may assaults to exceed authoritative happens a two-step adjustment



, if other considerations come on, in a restrained or limited young men of the nation's remain intact, the value the decline, and any particular frightening. (This may be so likely to involve some battle- are also missing, however, the loss of all hope.) The air threat is a severe threat of conventional concerns and priorities of the time, in 1940 (but not in 1939), bombing, derived not so much involvement in the threat of military forces. Thus, French on the hope of an attrition of the relationship of returns on front lines. When the Maginot case French fears of invasion, at from the air. Similarly, Britishities rather than suffer a cross- and more realistic estimates of which even yet were exaggerated. "Persuasion" is the support bomber victory. If the enemy is suffering at least a chance that he will suffering will end, and his surrender. Thus, the hope of a victory—ve—one sometimes difficult to sense of justice," discussed before the opposition's tolerance of it. can, therefore, improve one's often seen as discrete ventures as "profit." In such a calculus, written off, but are translated acted on the incumbents at the ancient benefits of victory to out- may not only remove restraints ves for him to pursue total vic- bandonment of other restraints.

The process of communication between government and people can thus create anomalies in which the *conception* of painful destruction is more crucial than the destruction itself, freeing the government's hand in some cases, and forcing it in others. Another type of palliative, forcing further military action, is the offering of revenge (of "an eye for an eye"), which delivers certain nonrational, or psychological, compensating satisfactions to the people. This palliative was the one given the British public in 1917, in a series of "reprisal" raids which blossomed into something more. The very inauguration of the bombing exchange by the German Zeppelin services had stemmed, in part, from a similar desire to retaliate for the effects of the British blockade on the living standards of the German people, and for the occasional Allied bomber raids. Whether one describes this public demand as "sadism" or as a "sense of justice," the assurance of enemy suffering has served again and again as a morale builder, and if no more rational argument were to exist, might suffice today to make credible our threat to massively retaliate even when a war was already strategically lost.

Offering a slightly different palliative, "alarming" steps, such as the above-mentioned issuance of gas masks and civil defense instructions, have led the inhabitants of vulnerable cities to expect the worst, to resign themselves to severe punishment, with the result that the failure of bombing raids to live up to exaggerated prewar estimates came almost as a happy surprise. A parallel can be drawn here with today's debate on a "thinking about the unthinkable." Some sober advocates of systems analysis might argue that today's vague perceptions tend to exaggerate even the most horrible forms of war, and that careful examination of such war is preferable if we are not to be needlessly blackmailed into concessions in a "prewar" period. Implicitly, the proof of such an argument would be that we will, this time, be almost pleasantly surprised by the nature of a terror war, that it would, at most points, be more bearable than we now expect.

Without attempting to probe deeply into mass psychology, some hypotheses can be ventured. Aerial bombing can be inflicted on an unprepared population, which has not been extremely intimidated by this prospect before the war, but which now lets its imagination wander wildly as to "how bad" things will get. It can also touch a psychologically prepared population, deeply intimidated heretofore, which will feel that the threat is predictable and manageable, when it notices the failure of assaults to exceed authoritatively predicted levels of damage. There is perhaps a two-step adjustment process here, involving both the introduction



of the idea of terror attack, and its circumscription. At its uncircumscribed stage, the prospect can induce panic; Britain, in 1914, more or less illustrates the "unprepared" case, Britain, in 1940 (or perhaps Germany in 1944), represents the other. States may well be forced to choose between prewar intimidation and wartime panic. A palliative for one may undo the palliative for the other.

Other palliatives are available. The defenders may also become indifferent to further attacks if the first raid inflicts "all the damage" that could have been feared. "Values" are molded in terms of the thoughts people have about their surroundings. Destruction which is quantitatively interpretable as a "one city" attack has, at times, been qualitatively interpreted at the receiving end as the "end of safety for cities in this war." Such broad qualitative distinctions, couched in terms of "the war," are easily found in the promises populations exact from their political leaders during a "peace." Both sides, therefore, may come to attach much more importance to the first increments of destruction which invalidate promises of "no exposure to air attacks" or "no bombing of cities," than to succeeding increments; bargaining constraints of considerable magnitude thus have been removed at the first use of such force (as in the 1940 British raids on Berlin) and might not be reproduced for the rest of such a war, until a new "peace" appears from which new qualitative distinctions can be dated.

Vicariously, one might lament less an exposure to air attack where civil or air defenses had made such an attack less objectively destructive; yet it accomplishes little to lament other sources of indifference, such as the fact that severe bombing can be simply preferable to the costs of avoiding it, or that one can become psychologically enured even to the horrible. Instances of national indifference to bombing have not occurred very often historically, but often enough to set the stage for such attack, and often enough to pose a real problem for the humanitarian observer who is himself perhaps more interested than the victims in preventing such an attack.

### THE HOPE OF NEUTRALIZING THE OFFENSIVE ADVANTAGE

Few escapes have similarly seemed available in this period from the destabilizing possibilities of offensively superior air weapons. While some analysts have assumed that the system imposed by the striking power of aircraft was either desirable or inevitable, many have argued that some

technological change should be the system, thus to allow a parity laterally. Until some successful test of defense, however, no nation could seriously jeopardizing its own position would normally feel vulnerable to the inadequacies of surveillance. (After such a parity in doubt. (After the hoped to change the casualty expectancy drastically reducing the number of deaths could only increase the dangers by undetected cheating; monitoring would be sufficient to reassure nations at a level never to be established.)

Today's "finite deterrence" presumes the assumption that the normal rule has been technologically erased. When a nation has a moderate advantage, a nation may feel dominated. One could give advantages, only by procuring weapons; "finite deterrence" is rather of maintaining only a retaliatory force (and implicitly for one's neighbor's force levels). When the defense has risks engendered by normal uncertainty, inventory can at last be undergone. Previously required can then be given.

Any sure escape from the thro disabling advantage of aircraft was expended here to supply the of such efforts were inventions a development of flak in German runways for delivery systems wi the case that a smaller force of : a larger one on the ground. The concealable missile may provide stability dilemma, but despite such an innovation, none has at that striking first would not be m



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#### ADVANTAGE

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technological change should be sought to reverse the characteristics of the system, thus to allow a prudent nation to stabilize the peace unilaterally. Until some successful technological assistance was given to the defense, however, no nation could offer security to its neighbors without seriously jeopardizing its own safety. With equal-sized forces, each nation would normally feel vulnerable to a surprise attack by the other; the inadequacies of surveillance, moreover, would always leave even such a parity in doubt. (After World War I, British leaders, in fact, hoped to change the casualty exchange rate in favor of the defense by drastically reducing the numbers of aircraft in each country, but this could only increase the dangers of an honest nation being overwhelmed by undetected cheating; monitoring channels or inspection procedures sufficient to reassure nations at such reduced levels of weaponry were never to be established.)

Today's "finite deterrence" proposals have become plausible only with the assumption that the normal military superiority of the air offensive has been technologically erased. When the defense has, at last, been given a moderate advantage, a nation might feel secure without making another nation feel dominated. One could disable an enemy, in face of such defensive advantages, only by procuring a substantial numerical superiority in weapons; "finite deterrence" is the policy of choosing not to do so, but rather of maintaining only a retaliatory, pain-inflicting capability for one's self (and implicitly for one's neighbors) by a careful matching of lower force levels. When the defense has thus been technologically revived, the risks engendered by normal uncertainties about the size of an opponent's inventory can at last be undergone, and some of the delivery vehicles previously required can then be given up.

Any sure escape from the threat of instability posed by the offensive disabling advantage of aircraft had to be technological. Much effort was expended here to supply the defensive technology; among the fruits of such efforts were inventions as significant as radar in Britain (and the development of flak in Germany). But until the need for vulnerable runways for delivery systems was done away with, it was still always the case that a smaller force of aircraft aloft could destroy or immobilize a larger one on the ground. The advent, in the 1950's of the hardened or concealable missile may provide such a technological escape from the stability dilemma, but despite the many earlier concerns expressed for such an innovation, none has appeared any sooner to convince observers that striking first would not be militarily very advantageous.





## RESTRAINT AND SOPHISTICATION

Since a reliable elimination of the bombers' disabling and pain-inflicting capabilities could not be accomplished in this period, the achievement of a secure peace has remained doubtful. The threat of interim punishment would still have to outweigh the military advantages of the offensive first strike at the "strategic" level if a quite horrendous war is to be avoided. All use of bombers might hopefully be deterred in such a strategic confrontation. And if the threat of responsive terror-bombing could be credibly extended, it might also inhibit the use of more "conventional" or "tactical" weapons, or even of some competitive practices of the most nonmilitary nature.

Yet problems remain. A marked increase in the presumed likelihood of war still might stampede nations into pre-emptory actions thereby producing a war. The threat of interim punishment might, moreover, *not* be so credible against lesser attacks at the tactical level, where the advantages of the defense would then have to suffice as a deterrent. A nation quite averse to an unrestrained bomber war might thus still attempt a local or otherwise mutually restrained introduction of bombers, preferring this limited use to no use at all. Alternatively, conventional surface weapons might still be used, under an "umbrella" of restrained strategic bomber strength. Yet this "limited" war at the tactical level might, moreover, supply precisely the apprehension and crisis necessary to upset the unstable over-all balance and trigger a general war.

An over-all precariousness of the balance would, of course, contribute somewhat to deterring the lesser conflicts that could upset it, in effect making the threat of massive punishment for small aggressions credible once more. But where the over-all peace seemed more stable, limited wars again might break out more often.

The term "limited war" has at times been used to refer to wars in which less than the maximum of possible destruction is inflicted, and in which less than the totality of weaponry is used. All war, however, are limited in this sense, for the straightforward reason that many possible destructive acts do not, in themselves, serve the interests (physical or moral) of the attacker; no power, therefore, destroys as much as it is able to destroy. Of more significance instead, with the advent of significant terror weapons, are the limits or restraints which are maintained only because an opponent is thought to be maintaining some restraint in exchange. A "bargaining" process applies here in which each side leaves

something (but not everything) of his ability to destroy it. This has always been with us, it is the introduction of air weapons.

It is clear that no mutual restraint when one side can prevent retaliation of an overwhelmingly rapid, direct interim retaliation is, however, the completion of the disarmament to be in effect. The maintenance of a deal of circumspection on the part involved, if an escalation to war.

The adaption of the aircraft carrier to a war which was already fought or limited use of bombers were have been if the war had begun of relatively conscious exchange which seemed about to break above, only British rear areas real symmetry of the exchange target selection, in a conforming, at last, of a strong response proposed newer and more explicit to the battlefield; these rules because the new rules seemed Allies now felt that they could

The British attempt between bombers in Europe while retaliation similarly parallels more recent wars; bombers would have been "Zis" of the major powers, somewhat different in that other with the local forces that Britain. While Germany, especially in advantage in an Arab or Afghanistan to British use of bombers facilitate the reintroduction of were, in a sense, the reverse raise the specter of escalation



ers' disabling and pain-inflicting this period, the achievement of the threat of interim punishment by advantages of the offensive quite horrendous war is to be hopefully be deterred in such a state of responsive terror-bombing to inhibit the use of more "conventional" of some competitive practices

case in the presumed likelihood of pre-emptory actions thereby a punishment might, moreover, at the tactical level, where the have to suffice as a deterrent. A bomber war might thus still attain introduction of bombers, in all. Alternatively, conventional under an "umbrella" of restrained limited war at the tactical level apprehension and crisis necessary trigger a general war.

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something (but not everything) of value to the other, while reminding him of his ability to destroy it. While such a reciprocal limitation process has always been with us, it did not become extremely important until the introduction of air weapons.

It is clear that no mutual restraint can be in effect, by this definition, when one side can prevent retaliation by the other (by means, perhaps, of an overwhelmingly rapid, disabling capability); conversely, where the interim retaliation is, however, clearly sufficient to take hold before the completion of the disarming strike, some mutual restraint is likely to be in effect. The maintenance of such a restraint, then, requires a great deal of circumspection on the part of the political and military leaderships involved, if an escalation to unrestrained "all-out" war is to be avoided.

The adaption of the aircraft to military purposes developed in the midst of a war which was already fairly "general," and distinctions as to local or limited use of bombers were not as extensively elaborated as they might have been if the war had begun more gradually, or locally. Yet a series of relatively conscious exchanges of restraints were in evidence, a series which seemed about to break down completely in 1918. As pointed out above, only British rear areas were extensively bombed at first, and the real symmetry of the exchange came in this nebulous region of military target selection, in a conformance to the "laws of war." With the mounting, at last, of a strong response by the British in 1917, the Germans then proposed newer and more explicit limits, based on geographical proximity to the battlefield; these rules for "local war" were rejected by the Allies because the new rules seemed unfair and, more importantly, because the Allies now felt that they could force a German surrender by all-out air war.

The British attempt between the wars to bar the use or existence of bombers in Europe while retaining them for police purposes in colonies similarly parallels more recent arguments as to weapon uses in limited wars; bombers would have been useable only in areas away from the "ZIs" of the major powers. This "local war" argument was, however, somewhat different in that other major powers did not normally identify with the local forces that Britain and France might be trying to suppress. While Germany, especially under the Nazis, might have seen some advantage in an Arab or Afghan engagement with Britain, her major objection to British use of bombers in such an operation was that it might facilitate the reintroduction of bombers to Europe. Thus, the arguments were, in a sense, the reverse of those currently presented. The Soviets raise the specter of escalation perhaps because they legitimately fear the



effects of high-yield bombing in the local area *per se*, while Nazi Germany voiced opposition to the local use of bombing primarily because it legitimately feared escalation.

Warnings about the dangers of escalation may, in fact, have been quite realistic, in addition to serving as intimidating propaganda. The chronic inaccuracies of air navigation and bomb aiming have served as a major impediment to the survival of any geographic restraints. Overoptimism about navigation several times has tempted nations to count on the recognition of distinctions of restraint which could not really be recognized; the nonrecognition of such restraints then led, in turn, to the deliberate abandonment of parallel restraints.

Several borderline forms of restraint, often labeled as "limited strategic war," are widely discussed today. One, a discrete and relatively "painless" disarming of an enemy, is, in ways, historically exemplified in the German attempt to destroy the RAF in 1940. While a form of mutual restraint still remains in effect during this process, it would end, by the definition above, if and when the counterforce operation were successfully completed, for one side would have no terror instrument left to restrain. In the actual event, the 1940 attempt led to British escalation and all-out bombing. Another form of limited strategic war involves a limited terror attack or "limited strategic retaliation," whereby a state attempts to deter some operation of its opponent, by an obviously restrained infliction of pain. Such limited pain-inflicting operations might be steady, or in pulses clearly attached to specific events. Historical equivalents of such "limited strategic war," in the form of pulsed terror attacks, are also to be found in the single retaliatory blows of World War I, and in the World War II Bae-deker raids. No permanent escalation was involved here, but rather a "tit for tat" form of terror offensive explicitly restricted in duration, thus leaving most of the hostage unharmed, so that his government will continue to have an incentive to bargain.

One can now ask whether history shows that the threats of air weaponry have in fact been accompanied by sophisticated examinations of interacting restraints. When severe or unrestrained airborne violence was encountered in this century, was it because men proved unwilling or unable to analyze the "modern" strategic questions, or was it because these questions had, on one side, become irrelevant?

By its very nature, air warfare has been a very thoughtful process. Unlike a continuous trench war involving attacks on whatever the enemy sends across, air bombardment has involved single, discrete excursions

which cross, and leave unscathed, posing the most desirable, air bombardment from it in preference to targets of opportunity, still had to pass over the (or most politically important,

Few strategic bombers have they could find; the overwhelming a calculation process with destruction. From deliberation step to deliberation about delicate fare seemingly suited for motives and by apparent opportunities the air. Decisions to hold back motivation abound. Even to initiate or escalate operations sophisticated sort. A decision in villages to punish guerrillas decision to bomb Berlin in the Italian raids on Barcelona; gas attack on Berlin in 1918 a

If one is concerned as to whether it is useful to consider the requirements of a military decision, the evidence of the past. Terror-bombing has not been congenitally unwilling or uninvolved exercises in deterrence deeper than this, going to (opportunities are apparent) and opportunities). Where a strong interest, the "right" questions have at times, with crucially wrong between sophistication and action less than the former. Situations have, for one reason or another, destruction, and the achievement relevant. Inevitably, these experiences verge, for the miscalculations into a situation of indifference



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British escalation and all-out war involves a limited terror whereby a state attempts to deter by a steadily restrained infliction of might be steady, or in pulses of equivalents of such "limited attacks, are also to be found in and in the World War II Bae-volved here, but rather a "tit-for-tat" in duration, thus leaving his government will continue

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very thoughtful process. Un-acks on whatever the enemy had single, discrete excursions

which cross, and leave unscathed, hundreds of possible targets until supposedly finding the most desirable one. Even more so than in naval warfare, air bombardment from its inception has involved targets of choice in preference to targets of opportunity. The worst city-busting raids, in fact, still had to pass over the smaller border towns to go for the biggest (or most politically important, or most historically significant) city.

Few strategic bombers have been sent out merely to hit whatever they could find; the overwhelming proportion of such operations has involved a calculation process which took time to mull over the object of destruction. From deliberation about target complexes, it is but a short step to deliberation about deliberation. If ever there was a mode of warfare seemingly suited for motivational purposes, both by level of painfulness and by apparent opportunity for discrete operations, it was that of the air. Decisions to hold back on air operations for calculations of opponent motivation abound. Even the major decisions to go ahead and strike, to initiate or escalate operations, have normally been of a thoughtful and sophisticated sort. A decision by a ground force commander to start burning villages to punish guerrilla supporters might be spontaneous; the British decision to bomb Berlin in 1940, the Japanese pre-emption in 1941, the Italian raids on Barcelona in 1938, and the projected Allied poison gas attack on Berlin in 1918 and 1919 were not.

If one is concerned as to whether strategic planners will now be careful to consider the requirements of mutual restraints when making serious military decision, the evidence is that they have often done so in the past. Terror-bombing has not beset the world because planners have been congenitally unwilling or unable to be sophisticated or to engage in involved exercises in deterrence and coercion. The problem is, indeed, deeper than this, going to questions both of human perception (what opportunities are apparent) and of preference (how men react to apparent opportunities). Where a strong aversion to bombing destruction has existed, the "right" questions have normally been asked, only to be met, at times, with crucially wrong answers. If a distinction can be drawn here between sophistication and accuracy, the latter has been more of a problem than the former. Situations have arisen, moreover, where nations have, for one reason or another, become indifferent to threats of future destruction, and the achievement of restraints had, therefore, become irrelevant. Inevitably, these explanations for the breakdown of restraints converge, for the miscalculations of one side can easily enough drive the other into a situation of indifference.



Churchill's assumption in 1914 that a Zeppelin assault was imminent, thus requiring an immediate pre-emption on his part, was not unsophisticated; it was simply erroneous. Hitler's plan to destroy the RAF without escalating the war was not naive, but it represented a misjudgment of Churchill. Japanese hopes of fighting a war without inducing a maximum American effort (without suffering any bombing of the Japanese homeland) were calculated, but miscalculated. Any assumption that the other side will give up first, that the other side will first decide that the threat of bombing is unbearable, will necessarily be erroneous if both sides make it. If such miscalculations push either side into a position where it is significantly less worried about air attack, where it comes to prefer escalation, then restraints may collapse completely.

Thus, errors in judgment can easily occur among nations still mutually quite interested in restraints. Some of these errors may, in fact, become more likely as the war rolls on, and as the inflicted punishment dampens the perceptive abilities of responsive officials. Such an ongoing war may also, by itself, make nations less averse to bombing, less in favor of restraints, as sons and battles are lost, as airdromes and industrial sections of cities are destroyed, and as enemy capabilities are analyzed or disproven. The dynamics of war thus may make accurate calculations of opponents' intention both more difficult and more necessary as the war goes on; a final breakdown of restraints may well occur when the last error on one side drives the other into a real indifference to further attack.

#### RELEVANCE FOR THE FUTURE

Thus, the question finally arises as to how much of this past dynamic tendency toward unrestrained war should be projected into the future. The hardening of missile sites may have now removed the destabilizing offensive advantage of acrially-delivered weapons that has complicated our strategic problem so much. One might, in fact, argue that the offensive disabling threat of bombers was always overrated prior to 1945, and that the technology required to make this threat real in the 1950's also naturally served to remove the threat quickly. Yet the new "hardening" of weaponry pits the technology of "self-contained" missile launching systems against the guidance technology of incoming missiles; it could not (and cannot) be predicted that rapid technological progress (for example, on Polaris) would always have sufficed to preserve an advantage for the

defense. While the assumptions from 1900, perhaps even to 1950 the possibility still hangs over us, arise with new guidance and anti-

Nevertheless, for the immediate the advantage of the offense has that our burden of strategic soph ened. Perhaps most importantly, hurried in deciding whether an will under almost all circumstance the enemy attack, and then to guesses as to the imminence of wa able impact. Yet it is precisely i bilities that now may be so secur man error have arisen, and there lation which may not be so easily se

While the absence of a disabling possibility and threat of violent t no retaliation (and of an irresistil attempt to deter minor actions of probability threat of all-out war, c scribed, retaliatory blow. To thre in testing and challenging a thr nation may indeed now be able c struction will really be inflicted u to the prospect of such destructi ently inflicted because of miscalc tion may still retaliate, and a mu can still occur. It was pointed o immunity from terror raids by p missile defenses) *might* make a likely; a similarly threatening "i so much destruction on one sic attacks.

Most of the possibilities for e still, therefore, be as relevant c no longer with us. Cities may b communications chain of comm



appealing assault was imminent, on his part, was not unsophisticated to destroy the RAF without it represented a misjudgment of war without inducing a maximum bombing of the Japanese side. Any assumption that the side will first decide that the decision necessarily be erroneous if both sides are either side into a position of air attack, where it comes to the end completely.

Among nations still mutually suspicious, errors may, in fact, become inflicted punishment dampens itself. Such an ongoing war may be bombing, less in favor of retreating and industrial sections. Capabilities are analyzed or discredited. Accurate calculations of opportunity are necessary as the war goes on. It occurs when the last error occurs to further attack.

much of this past dynamic can be projected into the future. Now removed the destabilizing weapons that has complicated the situation, in fact, argue that the offense, overrated prior to 1945, and the threat real in the 1950's also diminishes. Yet the new "hardening" of missile launching systems is coming; it could not be logical progress (for example, to preserve an advantage for the

defense. While the assumptions and fears of strategists were premature from 1900, perhaps even to 1950, they were not inherently wrong and the possibility still hangs over us that an offensive advantage can again arise with new guidance and anti-submarine warfare systems.

Nevertheless, for the immediate future it may be safe to assume that the advantage of the offense has been (or is about to be) removed, and that our burden of strategic sophistication is, therefore, somewhat lightened. Perhaps most importantly, one would then no longer have to be as hurried in deciding whether an enemy air attack is on its way, since it will under almost all circumstances be militarily preferable to wait out the enemy attack, and then to respond and retaliate at leisure. Wrong guesses as to the imminence of war lose, therefore, most of their undesirable impact. Yet it is precisely in the application of the military capabilities that now may be so secure that many historical instances of human error have arisen, and there still remains a crucial problem of calculation which may not be so easily solved.

While the absence of a disabling capacity would eliminate much of the possibility and threat of violent total disarmament, of total victory with no retaliation (and of an irresistible urge to pre-empt), nations will still attempt to deter minor actions of their opponents by conjuring up a low-probability threat of all-out war, or a high-probability threat of a circumscribed, retaliatory blow. To threaten effectively one may have to inflict; in testing and challenging a threat, one may stumble into infliction. A nation may indeed now be able to wait to see whether unacceptable destruction will really be inflicted upon it, instead of reacting pre-emptively to the prospect of such destruction; but if such destruction is inadvertently inflicted because of miscalculations on either side, the aggrieved nation may still retaliate, and a mutually unwanted escalation to all-out war can still occur. It was pointed out earlier that a unilateral acquisition of immunity from terror raids by perfection of air defenses (today of anti-missile defenses) *might* make all-out attacks *by* the immune side very likely; a similarly threatening "immunity" can be achieved by inflicting so much destruction on one side that it becomes indifferent to further attacks.

Most of the possibilities for error in the handling of air weapons will still, therefore, be as relevant even if the stability problem is someday no longer with us. Cities may be hit because of errors in navigation; the communications chain of command may be defective; the value great





**Wars.** Intended restraints, of course, and this could lead to severe scale.

A last factor, perhaps in the atomic age, is the distinction has become the such a qualitative restraint until some other obvious ability to draw such qualitative; when one distinction While we previously may into the political consciousness been replaced by the nuclear bomb is used, the next qu established than in the days

In over-all summation, the lessons have been upon the weaknesses or palliatives exist for the circles, no sure technological solutions usually in reputation, have been threats. The response has its own lack of subtlety, but perhaps the bomber threat to fulfill the past might be less so in a future increase in stability engineering ventures where other error maintenance of restraints will be it is as inaccurate to say that say that the experience is en-

The probability that nuclear weapons will veer onto unintended targets (or even fire accidentally) must also be reckoned with, although this may be less likely than sometimes supposed. The fear that destructive machines will not behave as expected is, of course, not new; today's problem is very analogous to the inaccuracy of bombing in the two World



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Wars. Intended restraints, often enough, have not been executed restraints, and this could lead to severe violence if it occurred again on a serious scale.

A last factor, perhaps increasing chances of dangerous miscalculation in the atomic age, is the degree to which the nuclear-conventional distinction has become the principal focus of qualitative restraint. Once such a qualitative restraint is broken, it is difficult to restore any limit until some other obvious qualitative distinction is reached. The human ability to draw such qualitative distinctions is, however, not infinitely taxable; when one distinction is stressed, others erode for lack of attention. While we previously may have had a series of qualitative steps burned into the political consciousness of the major powers, these may have now been replaced by the nuclear-conventional distinction. When one atomic bomb is used, the next qualitative distinction may then be less easily established than in the days of simple, high-explosive bombs.

In over-all summation, the coupled threats of disabling and terror weapons have been upon the world's consciousness for some time. Few diversions or palliatives exist for the threat, and despite astute efforts in some circles, no sure technological escape has been found. States, in fact and usually in reputation, have had to exercise restraints in response to these threats. The response has itself been thoughtful, and it has not normally been a lack of subtlety, but perhaps an overoptimistic subtlety, that has brought the bomber threat to fulfillment. Some errors that were dangerous in the past might be less so in a world with no disabling capabilities, but any increase in stability engendered here might tempt nations into daring ventures where other errors are significant and possible. Problems in the maintenance of restraints will thus continue to be with us in this area; it is as inaccurate to say that we are unprepared by experience as it is to say that the experience is encouraging.

